MINIMUM STANDARDS
FOR LIMITED PERMIT X-RAY TECHNICIAN PROGRAMS

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STANDARDS
FOR
LIMITED PERMIT X-RAY TECHNICIAN SCHOOLS

I. AUTHORITY

The Radiographic Technology Act and Regulations Relating to Radiologic Technology contain the established laws and regulations relating to education, training and experience for Limited Permit X-ray Technician. The Department of Health Services Public Health has the directed responsibility to prescribe minimum standards of education training and experience and to provide for inspection and approval of Limited Permit X-ray technology Technician programs Schools.

II. DEFINITIONS

As used in these standards:

“Clinical Education” means the performance of X-ray procedures on human beings under supervision of a qualified X-ray Technician or a qualified Certified Radiologic Technologist and Supervisor and Operator, and as specified in Sections VIII and XII.

“Department” means the State Department of Health Services Public Health.

“Didactic Training” means or refers to the prescribed classroom and laboratory activities necessary to meet at least the minimum requirements outlined in Section VIII.

“Direct Supervision” means that the qualified supervisor of the student is present in the same area with the student at the time x-rays are being administered to the patient.

“Indirect Supervision” Means that a student may perform X-ray procedures on patients without direct supervision of a qualified X-ray Technician, Certified Radiologic Technologist or qualified Supervisor /Operator. Student may have indirect supervision once documented competency has been made for radiographic procedures being performed. The indirect supervisor must be in facility and readily available.

“Licentiate” means a physician and surgeon, osteopathic physician and surgeon, chiropractor or podiatrist licensed to practice in California.

“Limited Permit” means a permit issued by the Department to conduct limited X-ray technology applicable to specific areas of the human body.

“Program” “School” means organizational, administrative and educational entities offering any of the prescribed didactic training, didactic and clinical training education specifically designed for preparing candidates for qualification certification as limited permit X-ray Technicians. School shall be approved by The Department.
“Certified Radiologic Technologist” is an individual who has been issued a current certificate by The Department to practice Radiologic Technology.

“X-ray Technician” is an individual who has been issued current permit(s) described in title 17, section 30442 by the Department to practice Radiologic Technology.

“Qualified X-ray Technician, or Qualified Certified Radiologic Technologist” means a user of x-rays who possesses the State of California’s appropriate documentation with at least one year of practice in the profession to supervise an X-ray Technician student.

“Sheal” means that it is mandatory to meet the standard

“Should” means whenever practical or applicable the standard ought to be met.

“Supervising Licentiate” means a licentiate who has been issued a certificate or permit as an X-ray supervisor and operator by the Department of Health Services, and who functions as a supervisor of students.

“Supervising Licentiate or Supervisor Operator” means a licentiate who possesses a Radiology Certificate or Radiography Permit issued by the Department in order to use or supervise the use of X-rays on human beings.

III  APPLICATIONS OF STANDARDS

These minimum standards apply to all schools or programs preparing candidates to become X-ray Technicians in limited permit categories as defined below:

“Chest radiography” means radiography of the heart and lungs.

“Extremites radiography” means radiography of the upper extremities, including shoulder girdle; and lower extremities excluding hip joints and pelvis excluding sacrum/ coccyx procedures.

“GI” means… (Eliminated)

“GU radiography” “Abdomen” means a non-contrast radiograph of soft tissue organs, from the base of the lungs to the symphsis pubis.

“Leg-Podiatric radiography” means radiography of the knee, tibia and fibula and ankle and foot.

“Skull radiography” means radiography of the bones and soft tissues of the head and upper neck which includes cranium and facial bones.
“Torso-skeletal radiography” means radiography of the shoulder girdle, rib cage and sternum, vertebral column cervical, thoracic, lumbar, sacrum, coccyx, pelvis and hip joints.

“Sponsoring Institution” means a school approved by The Department of Public Health, Radiologic Health Branch as a Limited Permit X-ray Technician School.

IV PROGRAM APPROVAL

A. General Provision

1. Each program school shall obtain approval from approved by the Department before students may be enrolled admitted to the program school.

2. Each program school shall offer only those courses of X-ray instruction that are approved by the Department, whether in continuous sessions or by consecutive school semesters or quarters.

3. Fiscal stability of the program shall be insured through a financial plan which establishes a budget predicated upon assured income such as fees, gifts, appropriation, endowments and/or stipends, and recurring expenditures or meets the requirements of governing, licensing or accrediting bodies.

4. In programs schools where clinical affiliations are has been established, one component shall be designated the sponsoring institution. The relationship and the responsibilities shall be clearly defined in and based on a written agreement. This affiliation agreement shall be signed by authorized representatives of the components involved the Supervisor/Operator and Program Director, and shall become effective upon approval by the Department.

5. The sponsoring institution shall initiate the application for approval and assure that all regulations are followed.

   a. Initiate the application for approval

   b. Ensure that students are aware of the steps necessary for completing the requirements for eligibility to take the State limited permit X-ray Technician examination.

6. Approval or Accreditation Provisions:

   Each program and it’s components, that is, the private offices of licentiate or clinics as applicable shall be properly accredited by the appropriate State agencies or professional organizations as designated by the Department.

   Each school and it’s components shall be properly approved and accepted by the Department.
Private schools shall meet the requirements of the California State Department of Education. Private Post-secondary Educational Institutions with regard to ownership and management of the school and buildings, terms of leases, and financial resources.

Schools shall meet the requirements of the Department of Education, approved by the California Bureau of Private Postsecondary Education, its’ equivalent, or its’ successor, with regards to ownership and management of the school and buildings, terms of leases and financial obligations. Schools must also meet the requirements with regards to instructional staff. If any action by law enforcement agency is impending against a school or its representatives concerning Public Health and Safety they shall furnish the Department a full written explanation within 30 days.

7. Restrictions:

a. Courses of instruction and clinical procedures shall be restricted to the approved limited permit categories.

b. Affiliation with Clinical Education is prohibited from in-house hospital radiology departments. A hospital-based radiology department is prohibited.

8. There are no restriction regarding:

a. the number of affiliated licentiate, offices or clinics.

b. the distance between the sponsoring institution school and its affiliated components—clinical sites provided they are within the California border. Providing all of the applicable provisions of these standards have been met, specifically with regards to the clinical education and supervision provisions.

B. Application

Each program school applying for approval shall submit to the Department an application and other required documents and information on forms furnished by the Department.

C. Approval

Approval is subject to compliance with the laws, regulations and continued maintenance of at least the minimum these standards:

1. Provisional Approval, not to exceed one year, may be granted based on:

a. Commitments made by the program in its application which demonstrates
to the satisfaction of the Department, that the program meets, or will meet, the required laws, regulations and these standards.

b. On-site verification of the commitments made by the program and its application.

1. Approval, not to exceed five years, may be granted upon favorable evaluation of all pertinent documents and information. This shall include the findings of all departmental reports of an on-site inspection covering all components of the school program.

2. Approval is subject to periodic re-inspections of all components of the school program and/or submission of annual written progress reports, as specified by the Department.

D. Revocation of Approval

The Department may revoke, suspend, or place on probation any program school for failure to comply with the applicable standards or regulations. This includes, but is not limited to, fraud, misrepresentation, or violation of any applicable State or Federal law relating to the operation of the diagnostic Limited Permit X-ray Technology Technician program, school or related activities. Any proceedings for revocation or suspension or probation shall be conducted in accordance with provision of Chapter 5 (commencing with Section 11500) Part I of Divisions 3 of Title 2 of the Government Code and the Department shall have all of the powers granted therein.

The Department may withdraw approval of a program whose graduates consistently fail the State Limited Permit X-ray Technician examinations.

V. FACILITIES

Each program school shall assure that the student body is provided with classrooms, learning resources, laboratories and clinical facilities, as appropriate, and the staff has faculty and administrative offices settings, and adequate administrative support. The facilities shall meet the purpose for which they were intended and shall include at least all of the following:

A. Faculty and administrative offices settings shall have locked and secure student records and storage area.

B. Classrooms
   The classrooms shall be sufficient in number, well lighted, heated and/or air conditioned as appropriate, equipped with chalkboard or equivalent, and shall have storage space for equipment whether in the classroom or in other readily accessible storage areas. The classroom
shall be sufficiently large enough to provide seats for all students enrolled in class.

C. Learning Resources
The learning resources shall consist of more than a library or storehouse of instructional media or and devices.

1. Instructional resources and materials: the learning resources shall provide students and faculty with appropriate instructional resources, media and materials including a current reference library of X-ray Technology radiography material to include the category of which approval has been granted, for which the approval is sought or has been granted.

2. Services: The learning resources shall provide such services to both the students and the faculty as are required to meet relevant instructional needs.

3. All instructional materials The reference library shall be catalogued.

4. Periodic Student orientation shall be conducted in the use of materials available.

5. The reference library shall be readily available to all students at all reasonable times.

D. Laboratories

There shall be a well lighted and ventilated laboratories laboratory of appropriate size and properly equipped for practical work. This need not be a classroom.

1. Laboratory equipment shall include at least one functioning and energized x-ray unit appropriate to the category for which the school is approved, that shall be properly registered with the Radiologic Health Branch and have appropriate image receptor-processing facilities. In addition, each laboratory shall have or shall have assured use of suitable radiographic phantoms, and at least one step-wedge, a densitometer and sensitometer and appropriate Quality Control and Quality Assurance equipment for testing image processing.

2. Each x-ray facility shall comply with appropriate and applicable provisions of the California Radiation Control Regulations.
E. Clinical Educational Facilities
Affiliated clinical facilities shall provide sufficient amount of procedures both in variety and scope to all students to meet the requirements of Section VIII.

1. Affiliated clinical facilities for limited permit candidates may be in a clinic or Licentiate’s office or non in-house hospital radiology department.

2. Clinical education shall be given during or after the didactic training and shall be supervised by certified a qualified Supervisor Operator.

VI. ORGANIZATION

A. Faculty

1. The faculty shall be adequate in number, qualifications and composition.

a. Depending on the size of the student body and the number of affiliated clinical facilities, the faculty may consist of all of the following:

   1. X-ray Program Director (required)
   2. Instructor (required but may be X-ray Program Director).
   3. Supervising Licentiate Supervisor / Operator (required, if program is approved to provide clinical training) for the clinical component of the course.
   4. Clinical Coordinator (if affiliation is established) can not be Program Director if more than 30 students are currently participating in clinical education. Additional Clinical Coordinator is required for each additional 30 students participating in clinical education.
   5. Adjunct and guest faculty Instructor(s)

b. Responsibilities may be delegated or shared; however these may be delegated to, or shared by qualified individuals only.

2. Each faculty member and adjunct instructor, shall be suitably qualified through academic preparation, professional expertise, and/or appropriate training.

a) X-ray Program Director shall be one of the following:

   (1) Certified Radiologic Technologist with a minimum of two years of post certification experience and experience as an instructor in a diagnostic Radiologic Technology Program, or equivalent, as determined by the Department.
(1) Certified Radiologic Technologist with the following:
   a. Associates Degree by 2015 (Bachelor Degree by 2020)
   b. 5 years full-time post-certification experience
   c. 1 year experience as an instructor in a diagnostic Radiologic Technology
      program or X-ray Technician program.

(2) Radiologic physicist certified by the American Board of Radiology or equivalent,
as determined by the Department with experience as an instructor in an academic
course of study in Radiologic Technology or equivalent by the Department.

(3) Certified Supervisor and Operator with experience as a lecturer in an academic
course related to his/her professional specialty.

(3) A Licentiate with the following:
   a. Radiology Certificate or Radiography Permit
   b. A minimum of 5 years experience
   c. 1 year experience as an instructor in all curriculum of the school

(4) X-ray Technician with the following:
   a. Associates Degree by 2015 (Bachelor Degree by 2020)
   b. 5 years full-time post permit experience
   c. 1 year experience as an instructor in an X-ray Technician School.
   d. Current permit(s) issued by the Department in all the categories
      offered by the school.

b) Instructor shall be one of the following:

   (1) Certified Radiologic Technologist with the following:
      a. 3 years full-time post-certification experience
      b. Current certification by Department

   (2) X-ray Technician with the following:
      a. 3 years full-time post Limited Permit X-ray Technician
         experience.
      b. Current holder of permits issued by the Department to
         include the scopes as defined by The Department in which
         the instructor will teach.

   (3) Supervisor/Operator with the following:
      a. Licentiate of the Healing Arts
      b. Current holder of valid certificate in radiology or permit in
         radiography issued by the Department.
(4) Adjunct Instructor shall be suitably qualified through academic preparation, professional expertise, and/or appropriate training. This individual shall not be used as the primary instructor for the program.

c) Clinical Coordinator shall be one of the following:
   (1) Certified Radiologic Technologist with the following:
      a. 3 years full-time post certification experience.
      b. Current certification by Department

   (2) X-ray Technician with the following:
      a. 3 years full-time post-certification experience.
      b. Current holder of valid permits issued by the Department in chest, extremities and torso-skeletal categories.
      c. Must possess the permits in which any additional approved category is being taught.

   d) Clinical Supervisor/Operator shall be the following:
      a. Licentiate of the Healing Arts
      b. Current holder of valid certificate in radiology or permit in radiography issued by the Department.

3. Responsibilities:

a. X-ray Program Director shall be physically present at the school for the majority of the normal operational hours of the school; shall actively participate in and be responsible for, but need not be limited to, all of the following:

(3) Development of the approved curriculum to assure that at least the minimum requirements are complied with standard, as specified in Section VIII, page 11, are complied with.

(2) Assurance that all faculty members have and will follow the established curriculum course outlines and lectures notes, where applicable. These course outlines curriculum shall be designated for active student participation and shall include a description of the instructional techniques to be used, material to be covered, instructional resources, performance or behavioral objectives, and student evaluation policies.

(3) Assurance that all instructors and clinical coordinator(s) who teach X-ray courses employ efficient effective teaching methods to ensure that all students receive appropriate and adequate training education in:

   a. General Radiography Laboratory
   b. Radiation Protection Laboratory
   c. Positioning Laboratory
d. Clinical education (if applicable)
e. Quality Assurance / Quality control

(4) Development of a set of rules and maintenance of policy and procedures, which reflect current legal and ethical responsibilities of the profession, which must be followed by the student.
   a. Obtain diagnostic quality radiographs with minimum to exposure of the patient.
   b. Protect patient and personnel from unnecessary exposure.

(5) If otherwise not available, Provide academic advice and guidance pertinent to the profession.
(6) In regards to Clinical Education, the Program Director is responsible for fully executing affiliation contract for each clinical agreement.
(7) If otherwise not available, provide academic advice and guidance.

b. The instructor is responsible for conducting regular classes and laboratory session, as specified in Section VIII, page 11.

c. The clinical coordinator, if applicable, shall have duties that entail at least the following:
   (1) Discussions at suitable intervals (preferably twice a month) with each student and his/her clinical supervisor and operator. Periodic visits to affiliated clinics or licentiate offices, where appropriate. Monthly documented clinical site visits shall be made to comply with the requirement.
   (2) Assurance that each student maintains appropriate clinical procedure logs and other required Department forms, and fulfills the clinical education requirements as stated in Section VIII G, page 12.
   (3) Assurance that students are adequately prepared for the assigned duties and are rotated in their duty assignments to meet the clinical education requirements. If it is deemed to be to the advantage of the student, the student should be rotated through more than one approved affiliated site—clinical facility.

d. Licentiate-The Supervisor and Operator is responsible for day-to-day guidance and where required or appropriate, for direct supervision of the student assigned to his/her medical facility for clinical education. The supervisor / Operator must be on site for no less than 50% of the approved clinical education in any one given month after the student has met documented competency. The Supervisor/Operator is responsible for designation of appropriate in-direct supervision in his/her absence.

Note: “Day-to-day guidance” means reviewing the request for clinical procedures, making a decision as to whether or not assuring the student can perform the procedures safely and accurately and checking of the radiographs—radiographic images.
e. Adjunct and guest faculty *Instructor* may teach part of a course as specified in Section VIII, page 11; however, guest faculty *but* shall not be used in place of, but only in addition to, regular faculty.

B. Students

Restrictions on the number of students are as follows:

1. In any formal lecture course, as specified in Section VIII B and C, page 11, the minimum number of enrolled students shall not be less than four.
2. In laboratory sessions the maximum number of students participating shall be determined by the need to adequately instruct all students in correct positioning, exposure techniques, and the use of equipment, accessories, and procedures for achieving the lowest exposures which will produce diagnostic quality *radiographic images*.
3. The number of students enrolled and on the premises during clinical education shall not exceed a ratio of one student for one supervising licentiate Supervisor / Operator present.
4. Student vacancies occurring during the school year shall not affect the status of existing approval.
5. When the enrollment in an approved program drops below four students, the program will automatically be placed on provisional status in the following school year.
6. If no students have been enrolled in a program for a period of two one years, the approval is automatically withdrawn. *Subject to review by The Department.*
VII  ADMINISTRATIVE POLICIES, REPORTS AND RECORDS

Each program school shall maintain all records and reports required by these standards. All such records shall be kept current and up-to-date and shall be readily available for inspection by an official representative of the Department.

A. Administrative Policies
1. General

Administrative policies shall be clearly stated in writing and shall be maintained as part of the administrative records. These policies shall include at least all of the following:

a. Statement of fees for tuition, registration, or other itemized charges.
b. Admission requirements
c. Class attendance requirements
d. Provisions for making up classroom, laboratory, or clinical education, if applicable.
e. Description of criteria for testing students.
f. Standards for grading (numerical equivalent or letter grades and basis for derived grades).
g. Student financial support arrangements if applicable.
h. Grounds for dismissal.
i. Conditions for granting refunds (non-enrollment, withdrawal, or dismissal).
j. Grievance Procedure
k. Record Retention

2. Admission to the Program

Admission to the program shall be based on, but need not be limited to the following:
a High School graduation document, or equivalent as recognized by The Department of Education.

3. Transfer Credits

A statement of policy concerning the acceptance of transfer credits shall be set forth in writing, and shall appear in at least one current official publication of the program school.

The Program school shall afford each transfer student the opportunity to obtain credit for the required classroom, laboratory, or clinical education which has been obtained in a Department approved Limited Permit X-ray Technician School or training program, using suitable methods of evaluation.
B. Reports

1. Within 30 days after any of the following events, an official of the program school shall inform the Department of, on forms furnished by the Department, information of the following:

   a. Change of X-ray Program Director or X-ray Course instructor, or Clinical Coordinator. If the qualifications and credentials of the new person are commensurate with the requirements specified in these standards, as determined by the Department, the approval of the program will not be affected.

   b. The change in facility location or telephone number.

   c. The change in course offerings or curricula.

   d. When a clinical affiliation agreement has been duly signed, changed appreciably, or dissolved.

   e. The names and addresses of students that have graduated.

   f. The names of students who have dismissed, suspended or have withdrawn.

2. Each program shall issue and submit to the Department, at least annually, at the time of school renewal application, a current catalog, pamphlet, or brochure detailing the program, school, including approval and accreditation status of the program school. The content and format shall follow the usual pattern of professional school publications and shall contain at least the following information:

   a. Curriculum and courses to be offered, course description, clock hours or credit hours per teaching time.

   b. Entrance requirements, discipline (such as class attendance, examination, grades) and graduation requirements, including the graduation document to be awarded.

   c. Tuition or stipends, special fees, estimated cost of books, dormitory (if applicable), and board (if applicable).

   d. Brief description of all the program’s facilities, including learning resources, laboratories, and clinical education facilities, if available.

   e. Members of faculty and their qualifications.

   c. Records

Records shall be kept up-to-date and other than provided in VII C-9, below, shall be maintained for five years and shall consist of all of the following:

1. Copies of all pertinent agreements with other schools, agencies, organizations and individuals.

2. All correspondence with the Department pursuant to the standards.

3. All pertinent directives, memos, rules and general orders.
4. Organizational and administrative structure of the program.
5. Current curriculum, course outlines and objectives, and copies of all last school year final examinations.
6. A record of the credentials of all faculty members.
7. Individual student’s records shall include all of the following:
   a. Transcripts of high school, college, or University as applicable.
   b. Proof of high school diploma, GED, proficiency exam or acceptable criteria by the Department of Education.
   c. Academic references as appropriate.
   d. Pertinent medical history.
   e. Attendance record
   f. Laboratory experiments performed with verifiable images upon request.
   g. Clinical education progress reports, including verifiable procedure logs.
   h. All courses taken, grades (classroom, laboratory, and clinical) if applicable) received, and units awarded, if any. *End of program documents.*

NOTE: The confidentiality or accessibility of student records shall be in compliance with established disclosure laws.


9. Student records relating to courses taken, grades received and units awarded if any, shall be kept indefinitely or as required by provisions of other laws or regulations.

**VIII CURRICULUM**

The curriculum shall provide for the acquisition of such knowledge, skills, and attitudes problem solving abilities as are required to qualify students for the appropriate State examinations, reasonable assurance that the students can pass such examinations and be of sufficient breadth to assure competence for employment as limited permit X-ray Technicians.

*The structure and design of curriculum shall consist of radiographic theory, use of current radiographic technology, competent clinical practice and professional values.*

A. **Minimum-Length of Training-Education**
   a. The course of study shall extend over a period of at least six months.
   b. The course of study shall be completed within 24 months.

*The course of study shall be no less than six months and be completed within 24 months.*
B. Basic Classroom Instruction
The course of study shall have at least 100 to 185 hours of basic classroom instruction as follows:

<table>
<thead>
<tr>
<th>Subject</th>
<th>Instruction</th>
<th>Hours of Instruction</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Radiation Protection and Safety Radiation Protection &amp; Biology</td>
<td>30 50</td>
<td></td>
</tr>
<tr>
<td>2. Radiographic Physics</td>
<td>15 20</td>
<td></td>
</tr>
<tr>
<td>3. X-ray Technical Factors <em>Principles of Exposure</em></td>
<td>15 30</td>
<td></td>
</tr>
<tr>
<td>4. Equipment Operation and Care / QA/QC</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>5. Darkroom and Film Processing <em>Image Processing</em></td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>6. Medical Terminology</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>7. Medical Ethics</td>
<td>4 5</td>
<td></td>
</tr>
<tr>
<td>8. Nursing Procedures <em>Patient Care</em></td>
<td>4 10</td>
<td></td>
</tr>
<tr>
<td>9. Film Critique <em>Image Evaluation</em></td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>10. Anatomy and Physiology (general overview)</td>
<td>5 20</td>
<td></td>
</tr>
<tr>
<td>11. Pediatric/Geriatric Radiography</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>12. Digital Radiographic Technology</td>
<td>20</td>
<td></td>
</tr>
</tbody>
</table>

C. Specialized Classroom Instruction *Permit Category Classroom Instruction*
For each category the program is authorized to instruct, at least the following hours of specialized specific instruction in anatomy and physiology and positioning shall be given:

<table>
<thead>
<tr>
<th>Category</th>
<th>Hours of Anatomy Instruction</th>
<th>Hours of Positioning Instruction</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Chest</td>
<td>40 5</td>
<td>5</td>
</tr>
<tr>
<td>2. Extremities</td>
<td>20 15</td>
<td>15</td>
</tr>
<tr>
<td>3. Gastrointestinal</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>4. Genitourinary</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td><strong>Abdomen (non-contrast)</strong></td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>4. Leg-Podiatric</td>
<td>10</td>
<td><strong>Suggesting their own Standards</strong></td>
</tr>
<tr>
<td>4. Skull</td>
<td>30 10</td>
<td>20</td>
</tr>
<tr>
<td>5. Torso-skeletal</td>
<td>30 15</td>
<td>15</td>
</tr>
</tbody>
</table>

D. Radiation Protection Laboratory
The course of study shall include at least 15 hours to 20 hours of radiation protection laboratory in which each student shall conduct experiments to illustrate at least the following:
1. Methods of reducing dose per exposure to patient
2. Methods of reducing dose to personnel
3. *Methods of reducing dose to general population.*
E. General Radiographic Laboratory

The course of study shall include at least 10 hours of general radiographic laboratory in which each student shall conduct experiments to illustrate at least the following:
1. Effects of kilovoltage, milliamperage, filtration, distance, and the heel effect on radiographic contrast and detail.
2. Control of scatter
3. Quality Control.

The effects of radiographic technical factors (Milliamperage, Time, Kilovoltage, Distance) and the radiographic quality factors of density, contrast, detail and distortion. Additional items to be covered are filtration, and Anode heel effect.

F. Additional Requirements – Quality Assurance Laboratory

The radiation protection course shall conform to a course outline approved by the Department. The course of study shall include 8 hours of Quality Assurance Laboratory in which each student shall conduct experiments to illustrate at least the following:

1. For Chemical Processing:
   e. Use of step wedge
   f. Use of densitometer
   g. Use of Sensitometer
   h. Darkroom Quality Assurance

2. For Digital Imaging Quality Assurance:
   a. Appropriate menu selection
   b. Part Placement
   c. Pre & Post processing
   d. Receptor Care /Erasing and Cleaning

Note: All schools shall have digital imaging processing capabilities by 2015.

G. Clinical Education

1. Supervised clinical education in each category shall extend over a period of at least 3 months but not longer than 12 months.
2. Each student shall have a name badge and dosimeter badge provided by the school. There shall be a written policy on the utilization of these items.
3. Each student must have documented procedure logs, evaluations, repeat logs and image evaluation documents.
4. During the supervised clinical education for each approved category, each student shall perform or assist in the performance of at least the following number of radiographic procedures:
IX CLINICAL SUPERVISION

A. Clinical education shall be under general and direct supervision of qualified Certified Radiologic Technologist or X-ray Technician along with a Supervising Licentiate. 

B. Direct supervision is required until the student is capable of performing the assigned X-ray procedures and duties accurately and safely.

C. An evaluation of each student’s ability to perform the clinical procedures shall be made at the conclusion of each phase of clinical procedures by the Supervisor / Operator.
   1. The results of such evaluations shall be kept as part of the student’s records.
   2. The student is permitted to apply X-rays to patients under general supervision only after satisfactory documented evaluations and competency.

X INSPECTIONS

Each program shall afford to the Department at all reasonable times the opportunity to interview the faculty, students, and to survey or inspect:

A. Physical facilities, including all laboratories and all affiliated clinical facilities, as applicable.

B. Educational and instructional materials, including the learning resources, instructor’s notes, and reference library.

C. Records maintained pursuant to these standards.

D. All situations where clinical supervision is required.

E. All other items necessary to evaluate the program.
XI  OTHER RELEVANTE INFORMATION

Each program shall provide such other related information as may be required by the Department.

XII

All variances from these minimum standards shall be requested in writing and shall be effective only upon written approval by the Department.